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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

BENNEKER et al.

Appl. No.: CPA of 09/200,743

Filed: November 27, 2000

For: CRYSTALLINE PAROXETINE METHANE SULFONATE (as amended)

Art Unit: 1625

Examiner: Chang, C.

REQUEST FOR INTERFERENCE WITH APPLICATION(S) PURSUANT TO 37 CFR § 1.604

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

Pursuant to 37 CFR § 1.604, it is hereby requested that an application-application interference be declared, between certain claims pending in the captioned application and one or more claims believed to be pending in one or more applications which claim entitlement to benefit of Craig *et al*, Serial No. 09/299,060, filed April 23, 1999, now U.S. Patent 6,063,927.

This request for interference is related to and complements applicants' concurrently filed request for an application-patent interference pursuant to 37 CFR § 1.607, between certain other claims of the captioned application and all claims of U.S. Patent 6,063,927.

The interfering subject matter relates to ***crystalline*** paroxetine methane sulfonate and related pharmaceutical compositions and therapeutic methods of treatment. Based upon their earlier filing date, applicants are *prima facie* the first inventors of the interfering subject matter.

To avoid unnecessary duplication, this Rule 604 request for interference does not restate all of the material facts set forth and documented in the accompanying Rule 607 request. Reference is made herein to the same supporting evidence, namely Exhibits 1-10 attached to the Rule 607 request for interference, and the accompanying Declaration of Michael T. Crimmins and Declaration of Theodorus Hendricus A. Peters.

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This request for interference is presented and organized as follows:

SKB'S PROBABLE PENDING APPLICATIONS

In accordance with 37 CFR § 1.604(a)(2), the following information is provided to assist the Examiner in identifying the suspected pending SKB application(s) and the relevant interfering claims likely to be pending therein.

As discussed in applicants' related Rule 607 request for interference, Synthon's '447 patent (Exhibit 1) issued two months before SKB filed its own application which matured into the '927 patent (Exhibit 2). The Examiner may identify relevant SKB applications by looking for pending applications which claim entitlement to benefit of the application which matured into the '927 patent, namely, application Serial No. 09/299,060.

The four claims now appearing in the '927 patent were not original application claims. All original application claims were all canceled *ex parte* -- in the absence of any restriction requirement or any rejection. It is believed to be highly likely, in view of SKB's originally presented U.S. claims (Exhibits 3 and 4) and in view of SKB's claims presently undergoing examination in two counterpart EPO divisional applications (Exhibits 5 and 6), that SKB has pending one or more U.S. applications which also contain additional interfering claims.

Some of SKB's originally filed claims were broadly directed to "paroxetine methane sulfonate," and to related pharmaceutical compositions and therapeutic methods of treatment. See Exhibit 3 (claims 1, 20, 31) and Exhibit 4 (claims 40, 59, 69). Certain of SKB's original application claims recited "crystalline" paroxetine methane sulfonate, and still other claims purported to characterize the crystalline

material by recitation of ten IR peaks (not eight, as in the '927 claims) and/or by recitation of twenty x-ray diffraction peaks. See Exhibit 3 (claims 3, 4) and Exhibit 4 (claims 42, 43).

SKB has at least two divisional applications pending before the EPO. Claims of "Div 1" are directed to pharmaceutical compositions containing (any form of) paroxetine methane sulfonate. See Exhibit 5 (claims 1-8, 16-24). Claims of "Div 2" are directed to paroxetine methane sulfonate having particular melting points and to pharmaceutical compositions containing those paroxetine methane sulfonates. See Exhibit 6 (claims 1-4, 6-10).

Thus, the Examiner may find a variety of claims in one or more pending SKB applications which commonly recite "crystalline" paroxetine methane sulfonate, possibly characterized by IR peaks, XRD peaks and/or melting points. Additional claims are likely to be directed to pharmaceutical compositions and/or methods of treatment.

WHY AN APPLICATION-APPLICATION INTERFERENCE SHOULD BE DECLARED AND ADJUDICATED WITH THE CONCURRENTLY REQUESTED APPLICATION-PATENT INTERFERENCE

In accordance with 37 CFR § 1.604(a)(3), the requested application-application interference should be declared for the following reasons.

Applicants' accompanying Rule 607 request for interference can only reach the four specific claims which appear in SKB's '927 patent. Only those four patent claims would be addressed in the judgment entered in the requested application-patent interference. 37 CFR § 1.658(a).

As shown above, however, it is highly likely that SKB has a variety of pending application claims commonly based on "crystalline" paroxetine methane sulfonate. If SKB intends to pursue any of those claims, they should be adjudicated in the requested interference. SKB should not be permitted to hide in the shadows, controlling not only what claims are eventually presented, but when those claims are presented.

Indeed, MPEP §2305 provides, "[t]he intention of the parties to claim the same patentable invention, as expressed in the summary of the invention or elsewhere in the disclosure or in the claims, is an essential to declaring an interference or suggesting interfering claims in every instance." SKB has made it clear that it regarded the subject matter of its original claims as part of the invention when its application was first filed. Accordingly, either those claims should be presented and adjudicated in an interference, or else SKB should be estopped from belatedly presenting them in the future.

If all variants of the mentioned salt, pharmaceutical composition and method of treatment claims are not already pending, the Examiner is requested to exercise her discretion under Rule 605 and suggest to SKB that it present those claims in an application. At a minimum, it is submitted that the suggested claims should include the recitations set forth in the counts proposed below. If SKB then fails to present the suggested claims, it will be estopped to pursue those claims in the future.

PROPOSED COUNTS

In accordance with 37 CFR § 1.604(a)(1), the following three counts are proposed. They are numbered Count 3, Count 4 and Count 5 because two related

counts, Count 1 and Count 2, are presented in applicants' accompanying request for interference with the '927 patent, pursuant to 37 CFR § 1.607.

Count 3: Crystalline Paroxetine Methane Sulfonate

Claim 30, 31 or 32 of Benneker, 09/200,743

or

Any Craig claim directed to crystalline paroxetine methanesulfonate, including but not limited to any claim in which the crystalline paroxetine methanesulfonate is characterized as having one or more of the following characteristics:

(a) crystallized from ethyl acetate; or

(b) having one or more of the following characteristics:

(i) one or more of the following IR peaks: 1603, 1513, 1194, 1045, 946, 830, 776, 601, 554, and 539 ± 4 cm^{-1}, and/or one or more of the following XRD peaks: 8.3, 10.5, 15.6, 16.3, 17.7, 18.2, 19.8, 20.4, 21.5, 22.0, 22.4, 23.8, 24.4, 25.0, 25.3, 25.8, 26.6, 30.0, 30.2, and 31.6 ± 0.2 degrees 2 theta; and/or

(ii) a melting point greater than 143°C.

Count 3 is a "phantom count." It combines applicants' claims 31-32 and any Craig claim which defines the same patentable subject matter. If interference is declared, it is anticipated that the actual Craig claim numbers and application serial numbers will be recited in Count 3.

Count 4: Pharmaceutical Compositions

Claim 33, 34 or 35 of Benneker, 09/200,743

or

Any Craig claim directed to a pharmaceutical composition comprising crystalline paroxetine methanesulfonate, including but not limited to any claim in which the crystalline paroxetine methanesulfonate is characterized as having one or more of the following characteristics:

(a) crystallized from ethyl acetate; or

(b) having one or more of the following characteristics:

(i) one or more of the following IR peaks: 1603, 1513, 1194, 1045, 946, 830, 776, 601, 554, and 539 ± 4 cm^{-1}, and/or one or more of the following XRD peaks: 8.3, 10.5, 15.6, 16.3, 17.7, 18.2, 19.8, 20.4, 21.5, 22.0, 22.4, 23.8, 24.4, 25.0, 25.3, 25.8, 26.6, 30.0, 30.2, and 31.6 ± 0.2 degrees 2 theta; and/or

(ii) a melting point greater than 143°C.

Count 4 is a "phantom count." It combines applicants' claims 33-35 and any Craig claim which defines the same patentable[1] subject matter. If interference is declared, it is anticipated that the actual Craig claim numbers and application serial numbers will be recited in Count 4.

Count 5: Methods Of Treatment

Claim 36, 37 or 38 of Benneker, 09/200,743

or

A method for treating a patient suffering from a condition selected from the group consisting of alcoholism, anxiety, depression, obsessive compulsive disorder, panic disorder, chronic pain, obesity, senile dementia, migraine, bulimia, anorexia,

[1] As pointed out in the accompanying Rule 607 request, applicants do not concede that any Craig claims are "patentable" in a statutory sense.

social phobia, pre-menstrual syndrome (PMS), adolescent depression, trichotillomania, dysthymia and substance abuse, comprising administering to the patient a pharmaceutical composition comprising crystalline paroxetine methanesulfonate admixed with a pharmaceutically acceptable carrier or diluent, wherein the crystalline paroxetine methanesulfonate has one or more of the following characteristics:

(a) crystallized from ethyl acetate; or

(b) having one or more of the following characteristics:

(i) one or more of the following IR peaks: 1603, 1513, 1194, 1045, 946, 830, 776, 601, 554, and 539 ± 4 cm^{-1}, and/or one or more of the following XRD peaks: 8.3, 10.5, 15.6, 16.3, 17.7, 18.2, 19.8, 20.4, 21.5, 22.0, 22.4, 23.8, 24.4, 25.0, 25.3, 25.8, 26.6, 30.0, 30.2, and 31.6 ± 0.2 degrees 2 theta; and/or

(ii) a melting point greater than 143°C.

Count 5 is also a "phantom count." It combines applicants' claims 36-38 and any Craig claim which defines the same patentable subject matter. The disorders listed are taken from the SKB application. See '927 patent (Exhibit 2) at column 8, lines 52-60. If interference is declared, it is anticipated that the actual Craig claim numbers and application serial numbers will be recited in Count 5.

37 CFR § 1.601(f) provides that "[w]hen there is more than one count, each count shall define a separate patentable invention." It is believed that Counts 3, 4 and 5 define separate patentable inventions. They are directed, for example, to different statutory classes of patentable subject matter.

The Board has observed that it is "highly unlikely" and "rare" that different classes of statutory subject matter define (or are directed to) the "same patentable invention," *Orikasa v. Oonishi*, 10 USPQ2d 1996, 2003 (BPAI 1996). On the other hand, interferences are sometimes based on a phantom count which disjunctively

recites subject matter of different statutory classes, meaning that the corresponding claims are directed to the same patentable invention. *See Kridl v. McCormick, 41* USPQ2d 1446, 1448 (Fed. Cir. 1997) (single count disjunctively reciting "virus-resistant plant," "method of producing a virus-resistant plant," "DNA construct" or "plant cell.").

Should the Examiner and/or the declaring APJ determine that the proposed counts are not directed to separate patentable inventions, it is requested that they be consolidated into a single count and that an application-application interference be based thereon. It is also noted that proposed Count 3 above defines the same patentable invention, and thus could be consolidated with, Count 1 proposed in the accompanying Rule 607 request.

BENNEKER CLAIMS CORRESPONDING TO COUNTS 3-5

Claims 30-39 are pending in this application. See Preliminary Amendment dated November 27, 2000. Claims 30-38 correspond to Counts 3-5, as indicated below.

Claims 30-32 Correspond To Count 3

Claims 30-32 are reproduced below:

> 30. Crystalline paroxetine methanesulfonate prepared by crystallizing paroxetine methanesulfonate from ethyl acetate.
>
> 31. Crystalline paroxetine methanesulfonate having the following IR peaks: 531, 546, 777, 838, 931, 962, 1038, 1100, 1169, 1208, 1469, 1500, 1515, 1615, 2577, 2869, 2900, 3023.
>
> 32. Crystalline paroxetine methanesulfonate.

To the extent that "prior art" Count 3 specifically recites claims 30, 31 or 32, those claims are anticipated by and obvious in view of Count 3. Therefore, claims

30, 31 and 32 define the same patentable invention as Count 3 and are properly designated as corresponding to Count 3.

Claims 33-35 Correspond To Count 4

Benneker claims 33-35 are reproduced below:

> 33. A pharmaceutical composition comprising crystalline paroxetine methanesulfonate admixed with a pharmaceutically acceptable carrier or diluent, wherein the crystalline paroxetine methanesulfonate has been crystallized from ethyl acetate.
>
> 34. A pharmaceutical composition comprising crystalline paroxetine methanesulfonate admixed with a pharmaceutically acceptable carrier or diluent, wherein the crystalline paroxetine methanesulfonate has the following IR peaks: 531, 546, 777, 838, 931, 962, 1038, 1100, 1169, 1208, 1469, 1500, 1515, 1615, 2577, 2869, 2900, 3023.
>
> 35. A pharmaceutical composition comprising crystalline paroxetine methanesulfonate admixed with a pharmaceutically acceptable carrier or diluent.

To the extent that Count 4 specifically recites claims 33, 34 or 35, those claims are anticipated by and obvious in view of Count 4. Therefore, claims 33-35 define the same patentable invention as Count 4 and are properly designated as corresponding to Count 4.

Claims 36-38 Correspond To Count 5

Benneker claims 36-38 are reproduced below:

> 36. A method for treating a patient suffering from a condition selected from the group consisting of depression, obsessive compulsive disorders, panic disorders, bulimia, anorexia, pain, obesity, senile dementia, migraine, and social phobias, comprising administering to the patient a pharmaceutical composition comprising crystalline paroxetine methanesulfonate admixed with a pharmaceutically acceptable carrier or diluent, wherein the crystalline paroxetine methanesulfonate has been crystallized from ethyl acetate.

37. A method for treating a patient suffering from a condition selected from the group consisting of depression, obsessive compulsive disorders, panic disorders, bulimia, anorexia, pain, obesity, senile dementia, migraine, and social phobias, comprising administering to the patient a pharmaceutical composition comprising crystalline paroxetine methanesulfonate admixed with a pharmaceutically acceptable carrier or diluent, wherein the crystalline paroxetine methanesulfonate has the following IR peaks: 531, 546, 777, 838, 931, 962, 1038, 1100, 1169, 1208, 1469, 1500, 1515, 1615, 2577, 2869, 2900, 3023.

38. A method for treating a patient suffering from a condition selected from the group consisting of depression, obsessive compulsive disorders, panic disorders, bulimia, anorexia, pain, obesity, senile dementia, migraine, and social phobias, comprising administering to the patient a pharmaceutical composition comprising crystalline paroxetine methanesulfonate admixed with a pharmaceutically acceptable carrier or diluent.

To the extent that Count 5 specifically recites claims 36, 37 or 38, those claims are anticipated by and obvious in view of Count 5. Therefore, claims 36-38 define the same patentable invention as Count 5 and are properly designated as corresponding to Count 5.

ENTITLEMENT TO EARLIER FILING DATE UNDER 35 U.S.C. § 120

Applicants request that they be accorded benefit under 35 U.S.C. § 120 of grandparent application Serial No. 08/872,023, filed June 10, 1997, and of parent application Serial No. 09/200,743, filed November 30, 1998. The specification of this application is identical to the specification in the two underlying applications, and support for the pending claims has previously been shown.

CONCLUSION

For the reasons stated above, the requested application-application interference should be declared and adjudicated with the concurrently requested application-patent interference.

Respectfully submitted,

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#17
Attach

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

BENNEKER et al.

Appl. No.: CPA of 09/200,743

Filed: November 27, 2000

For: CRYSTALLINE PAROXETINE METHANE SULFONATE (as amended)

Art Unit: 1625

Examiner: Chang, C.

REQUEST FOR INTERFERENCE WITH PATENT PURSUANT TO 37 CFR § 1.607

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

Pursuant to 37 CFR § 1.607, it is requested that an interference be declared between certain claims pending in the captioned application and all of the claims of U.S. Patent No. 6,063,927. The interfering subject matter relates to ***crystalline*** paroxetine methane sulfonate. Based on their filing date, applicants are *prima facie* entitled to judgment. 37 CFR § 608(a).

Concurrently filed herewith, as a separate document, is a related request for interference pursuant to 37 CFR § 1.604, requesting declaration of an interference between certain other claims pending in the captioned application and several claims believed to be pending in one or more applications which claim entitlement to benefit of the application that matured into U.S. Patent No. 6,063,927.

This request for interference is supported by the documentary exhibits attached hereto, and by the accompanying Declaration of Dr. Michael T. Crimmins and Declaration of Theodorus Hendricus A. Peters.

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This request for interference is presented and organized as follows:

THE ADVERSE PARTIES

Synthon's '447 Patent And Captioned Application

Paroxetine methane sulfonate and, in particular, ***crystalline*** paroxetine methane sulfonate, was first described in applicants' grandparent application Serial No. 08/872,023, filed on June 10, 1997. On February 23, 1999, that application matured into Benneker *et al.*, U.S. Patent 5,874,447 ("the '447 patent," copy attached as Exhibit 1). The '447 patent and captioned application are assigned to Synthon B.V. ("Synthon").

Claim 21 of the '447 patent is directed to paroxetine methane sulfonate *per se* and thus *generically* covers ***any*** physical form of the material, including crystalline, noncrystalline, dissolved in solvent, etc. No claim in the '447 patent is directed specifically to crystalline paroxetine methane sulfonate. See Exhibit 1.

The captioned application is identical in disclosure to the '447 patent. The captioned application claims entitlement to benefit under 35 USC §120 of the June 10, 1997 filing date of the application which matured into the '447 patent.

Claims 30-32 of the captioned application are specifically directed to "***crystalline***" paroxetine methane sulfonate. Claims 33-35 and claims 36-38 are directed, respectively, to pharmaceutical compositions and therapeutic methods of treatment based on the crystalline paroxetine methane sulfonate recited in claims 30-32. Claim 39 recites a process for preparing paroxetine *hydrochloride* by contacting paroxetine methane sulfonate and hydrochloric acid. See Preliminary Amendment dated November 27, 2000.

SKB's '927 Patent And Probable Pending Applications

Two months after the '447 patent issued, SmithKline Beecham ("SKB") filed Application Serial No. 09/299,060. The application disclosed and claimed "crystalline" paroxetine methane sulfonate. On May 16, 2000, SKB's application matured into Craig *et al.*, U.S. Patent 6,063,927 ("the '927 patent," copy attached as Exhibit 2).

Claim 1 of the '927 patent recites: "Paroxetine methanesulfonate in **crystalline form** having the following characteristic IR peaks: 1603, 1194, 1045, 946, 830, 601, 554 and 539 ± 4 cm^{-1}." Claim 3 omits the "± 4 cm^{-1}" variation permitted by claim 1. Claims 2 and 4 recite, respectively, a process for preparing paroxetine **hydrochloride** by contacting the paroxetine methane sulfonate of claim 1 or 3 with hydrochloric acid. See Exhibit 2.

It is believed to be highly likely, in view of SKB's *originally* presented U.S. claims (Exhibits 3 and 4) and SKB's claims undergoing examination in two counterpart EPO divisional applications (Exhibits 5 and 6), that SKB has pending one or more U.S. applications which also claim "crystalline" paroxetine methane sulfonate. It is suspected that the claims are based upon recitation of partial lists of different/additional IR peaks, partial lists of x-ray diffraction (XRD) peaks, melting points, *etc.* It is also likely that SKB has pending claims or will be asserting claims to pharmaceutical compositions and/or therapeutic methods of treatment based on those "crystalline" materials. Such claims are the subject matter of the accompanying request for interference under Rule 604.

WHY THERE SHOULD BE AN INTERFERENCE WITH THE '927 PATENT

The evidence presented in the accompanying Crimmins and Peters declarations establishes that the crystalline paroxetine methane sulfonate described and claimed in the captioned application is the same crystalline paroxetine methane sulfonate described and claimed in the '927 patent. The crystalline materials have the same x-ray diffraction patterns and they have the same IR spectra. They are not "polymorphs," as SKB has suggested to the EPO -- but not to the PTO.

All the evidence, including the very experiments set forth in the '927 patent itself, indicates that there is only a single crystalline form of paroxetine methane sulfonate. Applicants are *prima facie* the first inventors of that material, and applicants are *prima facie* entitled to a patent containing claims directed to that material.

The '927 *claims*, however, by reciting a few supposedly "characteristic" IR peaks, create the illusion that they are directed to a unique or different crystalline form of paroxetine methane sulfonate.

Original application claim 40 of SKB's application was broadly directed to "paroxetine methanesulfonate." Claim 42 recited paroxetine methanesulfonate "in crystalline form" and claim 43/42 recited the material of claim 42 "having *inter alia* the following characteristic IR peaks: 1603, 1513, 1194, 1045, 946, 830, 776, 601, 554 and 539 ± 4 cm^{-1}." See Exhibits 3 and 4. Although clearly prior art under § 102(e) and §102(a), respectively, neither the '447 Synthon patent (Exhibit 1) nor its PCT counterpart published on December 17, 1998 (Exhibit 7) was cited against SKB's claims. In fact, no Office Action on the merits was ever issued.

SKB's application was allowed following submission of a preliminary amendment (Exhibit 8) and a telephonic interview with the Examiner during which no

prior art was discussed (Exhibit 9). All originally filed claims were cancelled and replaced by new claims limited to "***crystalline***" paroxetine methane sulfonate having ***eight – not all ten*** – of the previously recited and supposedly "characteristic" IR peaks. Coincidentally, or so it may seem, the two deleted IR peaks are expressly described in a partial list of IR peaks included in Table 1 of Synthon's '447 patent.

It is absolutely clear that the '927 claims were allowed without inquiry into or resolution of the *dispositive* issue, *viz.*, whether the "crystalline" paroxetine methane sulfonate recited in the claims of the '927 patent is structurally different from the crystalline paroxetine methane sulfonate previously described and now specifically claimed by applicants. The situation here is thus analogous to that in *In re Grose*, 201 USPQ 57 (CCPA 1979).

In *Grose*, the applicants claimed a zeolite material by reciting certain features of its x-ray diffraction pattern. The claims were rejected in view of a prior art reference which described a zeolite having a very similar x-ray diffraction pattern. The applicants rested their case for patentability solely upon asserted "differences" in the numerical d-spacings and relative intensities listed, respectively, in the prior art reference and in the claims. For example, the claims recited numerical d-spacing values *not* specifically listed in the prior art reference. 201 USPQ at 61. The applicants declined to submit any evidence of actual *structural* differences between the claimed and prior art materials. 201 USPQ at 63.

In an unanimous decision finding the claims unpatentable, the CCPA criticized the applicants' naked reliance upon differences *per se* in the numerical diffraction data. The dispositive issue, never addressed by the applicants, was the "significance" of those differences. Chief Judge Markey explained, 201 USPQ at 61-62:

> Comparison of Table B of appellants' claims with Table I of Milton establishes that the X-ray diffraction patterns are very similar. . . .
>
> . . . The ultimate question, in ascertaining whether a particular zeolite is a different species from those of like chemical composition, is whether it has the same crystal structure. Appellants are claiming a crystal structure. Thus, **we are concerned not with whether there are differences in d-spacing values and relative intensities, but with whether such differences support a conclusion that appellants' and Milton's zeolites have different crystal structures.**

The '927 claims are similar to those in *Grose*. The eight IR peaks selectively chosen and recited in the '927 claims do not and cannot support a conclusion that the referenced paroxetine methane sulfonate has a *different crystalline structure* from the crystalline paroxetine methane sulfonate previously described and now claimed by applicants. There is simply nothing in the eight IR peaks SKB ultimately decided to recite in its claims that is structurally distinguishing or "characteristic."

As set out in detail in the accompanying Peters declaration, simply because a particular numerical IR peak value is not *recited* in SKB's patent claim – or is not *listed* in Synthon's Table 1 - does not mean that the peak does not appear in the actual spectrum of the crystalline material. This is why it is important to overlay and compare complete IR spectra, rather than to merely compare selected numerical peak values derived from incomplete lists.[1/]

[1/] The danger in comparing only numerical IR peak values, instead of complete spectra, is discussed in Lippencott, The Limitations And Advantages Of Infrared Spectroscopy In Patent Problems, 45 JPOS 380, 394 (1963) ("Tabulated information has admittedly considerable value, but it cannot equal the actual curve. Thus, from the spectroscopist's standpoint a strong argument can be made that **whenever an infrared spectrum is important it should be presented as an entire curve**, along with information on the conditions under which it was taken.")

Applicants (but not SKB) have compared the actual IR spectra of the respectively disclosed crystalline paroxetine methane sulfonates. And applicants (but not SKB) have compared the x-ray powder diffraction patterns of the respectively disclosed crystalline paroxetine methane sulfonates. Those comparisons, the latter of which is dispositive of crystalline structure, establish that applicants and SKB have made, described and claimed the same crystalline material. In other words, SKB has not made, described or claimed a unique polymorph.

Since only one party can obtain a valid patent claiming "crystalline" paroxetine methane sulfonate, an interference should be declared with the '927 patent. In addition, and for the reasons discussed in the accompanying submission under Rule 604, a separate or consolidated interference should be declared with what are believed to be one or more pending SKB applications which claim the same and related subject matter.

SUMMARY OF MATERIAL FACTS

For the Examiner's convenience, key facts are briefly summarized below, with supporting citation to the more thorough discussions set forth in the accompanying Crimmins and Peters declarations.

Dr. Crimmins is a professor of organic chemistry at the University of North Carolina. He has been engaged for more than twenty years in the synthesis and structural characterization of organic compounds. In his declaration (cited to as Crimmins, ¶ __), Dr. Crimmins explains that he prepared crystalline methane sulfonate according to two different procedures described in the captioned application and determined that the two crystalline materials have the same x-ray powder diffraction pattern and the same infrared spectrum as the crystalline paroxetine methane sulfonate later described and claimed in the '927 patent.

Mr. Peters is one of the applicants in the captioned application. He has been engaged for more than fifteen years in the research and development of pharmaceutical compounds, including crystalline salts. In his declaration (cited to as Peters, ¶ __), Mr. Peters explains important aspects of the science of "polymorphism," a phenomenon in which certain solid materials - but not all - exist in two or more distinct crystalline forms. He explains, with supporting citation to the scientific literature, why x-ray powder diffraction is the principal analytical tool for investigating polymorphism and why infrared spectroscopy is not, particularly when the latter is used improperly. Mr. Peters discusses the evidence which establishes that the crystalline paroxetine methane sulfonate described and claimed in the captioned application is the same crystalline paroxetine methane sulfonate described and claimed in the '927 patent.

The Issue Of "Polymorphism" Raised By SKB Before The EPO

Whereas the '927 prosecution history does not memorialize any substantive argument or evidence on the matter, SKB argued to the European Patent Office ("EPO") that the crystalline paroxetine methane sulfonate described in its patent application is a different "**polymorph**" of the crystalline paroxetine methane sulfonate described by Synthon. Peters ¶¶ 15-16.

Polymorphism is the ability of a substance to exist as two or more structurally unique crystalline forms. Polymorphs of a given material have the same chemical composition, but they possess different three-dimensional crystal structures and they may exhibit different thermodynamic, spectroscopic, chemical and mechanical properties. Not all crystalline solids exist in polymorphic forms. Peters ¶¶ 6, 21-41.

Before the EPO, SKB attempted to distinguish the Synthon and SKB materials by comparing the *partial* list of IR peaks recited in its claims and the *partial* list of IR peaks included in the Synthon disclosure. The EPO Examiner requested a "direct comparison" of the *complete* IR spectra, but SKB never complied. SKB simply argued that IR peaks "not found" in the partial list of peaks in the Synthon reference was "evidently" proof of a new crystalline form of paroxetine methane sulfonate. Peters ¶¶ 15-16.

How Polymorphism Is Demonstrated

A conclusion that two or more crystalline materials are distinct polymorphic crystalline forms of a given material necessarily requires a comparison of those crystalline materials. Peters, ¶21. A battery of tests has been used for such comparisons, and skilled scientists do not base a conclusion of polymorphism upon a single test. Rather, it is common practice to employ several tests. To do otherwise risks

erroneous conclusions. See Peters ¶22, quoting Threlfall, *Analysis Of Organic Polymorphs*:

> All the solid state properties of the different polymorphic modifications of a compound will be different, but often only marginally so, to the point of instrumental indistinguishability. For this reason, it is important to look at potentially polymorphic systems by a variety of techniques to avoid erroneous conclusions. Failure to recognize a polymorph is the more obvious situation but it is also possible to identify polymorphs where none exist, if reliance is placed on too few techniques.

The dispositive way of establishing the existence of different crystalline forms is to ascertain and then compare the crystalline structures of the materials in question. This is done by x-ray diffraction, either single crystal or powder. See Peters ¶ 23, citing Threlfall, "In principle, then, any polymorph will give a distinctive x-ray powder pattern."

Because polymorphism depends upon the demonstrated existence of different crystalline structures, x-ray diffraction is generally regarded as the most useful analytical tool. See Peters ¶ 24, citing Byrn *et al.*, *Pharmaceutical Solids: A Strategic Approach To Regulatory Considerations*: "The first step in the polymorphs decision tree is to crystallize the substance from a number of different solvents in order to answer the question: Are polymorphs possible? . . . . The solids produced are analyzed using x-ray diffraction and at least one of the other methods," and Brittain, *Spectral Methods For The Characterization Of Polymorphs And Solvates*:

> A complement of physical characterization methods have been developed for the study of polymorphs and solvates, with many workers choosing to use the classical methods of crystallography, microscopy, thermal analysis, and solubility studies. However, it must be emphasized that the defining criterion for the existence of polymorphic types is a nonequivalence of crystal structures. For pharmaceutical

> agents, this criterion requires that nonequivalent X-ray powder patterns are observed for the various forms. All other observations must be considered as supporting and ancillary information and cannot alone be taken as definitive proof of the existence of polymorphism.

Infrared spectroscopy ("IR") may sometimes be used to compare known or suspected polymorphic forms of a given material, but IR analysis alone is not regarded as dispositive of the question of possible polymorphism. The *United States Pharmacopeia* (*"USP"*) is internationally recognized in the pharmaceutical field as an authoritative compendium of quality standards and scientific tests, assays and analytical methods for characterizing, identifying and/or comparing pharmaceutical materials. The USP acknowledges that infrared spectroscopy may be used in the evaluation of polymorphism, but it cautions that recorded IR peak values "may vary by as much as 0.1 *um* or 10 cm^{-1}, depending upon the particular instrument used." Peters ¶¶ 25-26.

Numerical values for peaks appearing in an IR spectrum may be estimated by hand measurement, by approximating the middle of a peak relative to a point on the abcissa of the graph; they may also be generated by a computer linked to the spectrometer. As resolution increases, the accuracy of a measured peak value increases, because peaks become narrower and better defined. Depending upon the resolution and method of measurement employed, seemingly dissimilar numerical peak values may be derived from different IR spectra, even though the spectra represent the same material run on the same instrument. One can easily be misled by comparisons of isolated peak values, particularly when they relate to different samples run on different instruments operated under different instrumental parameters. Peters ¶ 30-34.

When comparing IR spectra of suspected polymorphs, it is important to overlay and compare the complete spectra, rather than certain selected peaks. This is particularly true when the spectra have been generated by different instruments and/or when the spectra have been run at varying instrumental settings, including "resolution" and "transmittance." Peters ¶¶ 27-41.

The *Crystalline* Paroxetine Methane Sulfonate Described In The Captioned Application

The '447 patent illustrates two syntheses of crystalline paroxetine methane sulfonate. Table 1 of the '447 patent provides information about the crystalline paroxetine methane sulfonate referenced in Example 1, including eighteen IR peaks, *i.e.*, a *partial* list of peaks in the actual IR spectrum. The IR peaks listed in Table 1 of the '447 patent were obtained by *hand measurements* of a spectrum run at a resolution of 8 cm^{-1}. When IR peak values are approximated by hand measurement, they can vary by as much as ± 10 cm^{-1}, or even more, particularly at low resolution. Consequently, the peaks listed in Table 1 of the '447 patent were necessarily approximate values and were not as precise as digitally generated peak values, which may have a precision of as little as ± 1 or 2 cm^{-1}, particularly at high resolution. Peters ¶¶ 35-37.

The *Crystalline* Paroxetine Methane Sulfonate Described In The '927 Patent

The '927 patent contains 25 examples which describe the preparation of crystalline paroxetine methane sulfonate. The examples differ with respect to the reagents and manipulative process steps employed to prepare the crystalline material. In particular, various solvents are used, different stoichiometric amounts of reactants are used and different reaction and crystallization temperatures are used.

Notwithstanding that numerous different synthetic and isolation procedures are described in the '927 patent for the preparation of crystalline paroxetine methanesulfonate, the '927 patent identifies only one crystalline form of the material as being obtained. In particular, the '927 patent expressly states that the "same" x-ray powder diffraction pattern and the "same" IR spectrum was generated by the crystalline materials obtained, respectively, in Examples 3, 4, 12, 14, 15, 16, 18, 19 and 20. Peters, ¶¶ 38-39.

Before the EPO, SKB submitted copies of the actual spectra corresponding to the crystalline paroxetine methane sulfonates described, respectively, in Example 3 and Example 12 of the '927 patent. The resolution of each spectrum was 2 cm^{-1}. Thirty-four and forty-eight numerical peak values, respectively, were selected and printed out in the spectra of the Example 3 and Example 12 materials. Peters, ¶¶ 40-41.

"SKB's" Crystalline Paroxetine Methane Sulfonate Is The Same Crystalline Paroxetine Methane Sulfonate Described And Claimed In The Captioned Application

Powder x-ray diffraction is dispositive evidence of crystalline structure. Dr. Crimmins has made crystalline paroxetine methane sulfonate according to two different procedures described in the '447 Synthon patent and he has shown that the x-ray powder diffraction pattern of each of those materials is the same as the x-ray powder diffraction pattern of the crystalline paroxetine methane sulfonates described in the '927 patent. Crimmins, ¶¶ 8-10, 16-18. In addition, the materials made by Dr. Crimmins exhibit the same IR spectrum as the spectra of the crystalline paroxetine

methane sulfonates described and recited in the claims of the '927 SKB patent. Crimmins, ¶¶ 11-15.

Dr. Crimmins' x-ray diffraction patterns and IR spectra establish beyond doubt that the crystalline paroxetine methane sulfonate described in the '447 patent is the same crystalline paroxetine methane sulfonate later described in the '927 patent. Crimmins, ¶ 19; Peters, ¶¶ 42, 55.

The '927 patent itself implicitly shows that crystalline paroxetine methane sulfonate does not exist in different polymorphic forms. As noted above, Byrn *et al* specifies that "[t]he first step in the polymorphs decision tree is to crystallize the substance from a number of different solvents in order to answer the question: Are polymorphs possible?... The solids produced are analyzed using x-ray diffraction and at least one of the other methods." Consistent with the Byrn methodology, the '927 patent describes numerous different procedures for making and isolating crystalline paroxetine methane sulfonate, including the use of many different crystallization solvents, and then reports the powder x-ray diffraction patterns and IR spectra for the solids produced. The '927 patent states that the x-ray powder diffraction pattern of each crystalline material was "the same" and also states that the IR spectrum of each crystalline material was "the same." If different polymorphic forms of crystalline paroxetine methane sulfonate existed, it would be expected that they would have been revealed in SKB's numerous experiments. Peters, ¶¶ 42-43.

Example 15 of the '927 patent describes crystallization of paroxetine methane sulfonate from *ethyl acetate,* the same solvent from which paroxetine methane sulfonate was crystallized as described in the two synthetic procedures set forth in the captioned application (see column 7 of the '447 Synthon patent). It would be expected

that recrystallization of the same dissolved material from the same solvent would produce the same crystalline form of the material, and would not produce different polymorphic forms of that material. This is additional evidence -- although none is needed -- that the SKB '927 patent describes and claims the same crystalline paroxetine methane sulfonate as described and claimed in the captioned application. Peters, ¶¶ 43-44.

The IR data provided by Synthon and SKB strongly support the conclusion that Synthon and SKB have described and are claiming the same crystalline paroxetine methane sulfonate. SKB has simply crafted its claims, by selectively choosing -- and not choosing -- IR peaks, to create the illusion of a difference. Peters, ¶ 45.

Claim 1 of the '927 patent reads "paroxetine methane sulfonate in crystalline form having the following characteristic IR peaks: 1603, 1194, 1045, 946, 830, 601, 554 and 539 ±4 cm^{-1}." There is no legitimate scientific basis for SKB's selective recitation of these particular peaks. Many other unrecited peaks appear in all of SKB's spectra. More than thirty peaks are listed in Examples 3 and 4, and Examples 12, 14, 15, 16, 18, 19 and 20 repeatedly state, without providing a list of peaks, that "the same" IR was obtained as in Example 3. Peters, ¶ 46.

That SKB's selection of peaks to be recited in its claims was arbitrary and not based in science is clear from the fact that two of the ten originally recited "characteristic" peaks were canceled from the claims. As discussed above, it appears that the two peaks were erased from the claims solely because there were corresponding peaks listed in the '447 patent/PCT counterpart. The eight peaks recited

in the '927 claims thus represent not only an arbitrary list, but an incomplete list, of all the IR peaks appearing in SKB's spectra. Peters, ¶¶ 47-48.

Six out of the ten peaks initially recited in the SKB claim are listed in the Synthon patent and they match to within ±1 cm^{-1} to ±8 cm^{-1} , within the ±10 cm^{-1} variation the USP states may be expected when different samples are run on different instruments. Two of the peaks, those deleted from the SKB claim, match to within ±1 or ±2 cm^{-1}. Peters, ¶ 49.

Although the remaining four peaks recited in claim 1 of the '927 patent *appear* to be different from the Synthon peaks, these differences were artificially created by SKB's arbitrary selection and recitation of those particular peaks, rather than other peaks which also appear in SKB's actual spectra. For example, the SKB claim recites a peak at 1603 cm^{-1}, but it does not recite the peak at 1614 cm^{-1} which *also* appears in the actual SKB spectrum. See Examples 3 and 12 of the '927 patent. The recited peak at 1603 cm^{-1} thus *appears* to differ by 12 cm^{-1} from the 1615 cm^{-1} peak listed in Synthon's Table 1, but the "difference" is only 1 cm^{-1} if the 1614 cm^{-1} peak is substituted for the arbitrarily recited 1603 cm^{-1} peak. Similarly, SKB's recited peak at 946 cm^{-1} appears to differ by 15 cm^{-1} from the 931 cm^{-1} peak listed in Synthon's Table 1, but the "difference" is only 4 cm^{-1} if the 946 cm^{-1} peak is replaced by the 927 cm^{-1} peak which *also* appears in SKB's actual spectra. Peters, ¶ 50.

The scientific illegitimacy of basing a conclusion of polymorphism upon a comparison of arbitrarily selected IR peaks is plainly illustrated by the fact that, according to SKB's approach, one would conclude that the crystalline paroxetine methane sulfonates described in the '927 patent are *different* -- contrary to SKB's

repeated statements in the '927 patent that they have "the same" x-ray powder diffraction patterns and "the same" IR spectra. Peters, ¶ 51.

SKB submitted to the EPO copies of the IR spectra and a related peak table corresponding to the crystalline paroxetine methane sulfonates of Examples 3 and 12 of the '927 patent. The spectra and table listed thirty-four peaks for the Example 3 material and forty-eight peaks for the Example 12. Applying SKB's method of comparison, one would conclude that the IR spectra from Examples 3 and 12 are "different," because some of the peaks listed in Example 12 are not "found" in Example 3. Therefore, according to SKB, one would conclude that the respective crystalline materials are different. But that conclusion is untrue, as shown by the accurate statements in the SKB patent that the IR spectra are "the same" and the x-ray powder diffraction patterns are "the same" for the Example 3 and Example 12 materials. X-ray powder diffraction is dispositive of the crystalline structure of a material. Peters, ¶ 52.

Simply because a particular numerical peak value is not *listed* in SKB's patent claim -- or in Synthon's Table 1 -- does not mean that the peak does not appear in the actual spectrum of the actual crystalline material. And it does not mean that the actual crystalline materials are different. Indeed, when evaluating the possibility of polymorphism, it is important to obtain, overlay and compare <u>complete</u> IR spectra, rather than selected numerical peak values derived from incomplete lists. Peters, ¶ 53.

The Synthon spectrum was obtained at low resolution, 8 cm^{-1}, and the eighteen peak values listed in the '447 patent were estimated by hand measurement. The SKB spectrum, by contrast, was run at high resolution, 2 cm^{-1}, and the peak values listed in the '927 patent were measured by computer. Notwithstanding these differences, when the complete Synthon spectrum is compared to the complete SKB spectrum it is seen that peaks corresponding in location and relative intensity are easily seen and that no unique peak appears in either spectrum. Upon increase in resolution, the Synthon spectrum would gradually become more defined and would ultimately look exactly like the SKB spectrum. Peters, ¶ 54.

This is precisely what is seen in the different resolution spectra presented in the Crimmins declaration. See particularly ¶ 11 and related Tabs E and G (8 cm^{-1} and 2 cm^{-1} resolution) and Tabs H and J (same) which relate, respectively, to the crystalline paroxetine methane sulfonate made according to the "seed" and "Example 1" procedures described in the Synthon '447 patent. Crimmins, ¶¶ 8-20; Peters, ¶ 54.

FORMAL REQUEST FOR INTERFERENCE

Identification Of Patent

In accordance with 37 CFR § 1.607(a)(1) and (c), interference is hereby requested with Craig *et al.*, U.S. Patent No. 6,063,927.

Proposed Counts

In accordance with 37 CFR §§ 1.606 and 1.607(a)(2), two counts are proposed for interference, namely:

COUNT 1
Claim 1 or 3 of Craig, 6,063,927
or
Claim 30, 31 or 32 of Benneker, 09/200,743.

COUNT 2
Claim 2 or 4 of Craig, 6,063,927
or
Claim 39 of Benneker, 09/200,743.

37 CFR § 1.601(f) provides that "[w]hen there is more than one count, each count shall define a separate patentable invention." The test for determining whether counts define "separate" patentable inventions involves treating one count as though it were "prior art" to the other count. If the "prior art" count does not render the other count unpatentable under § 102 or § 103, the counts define separate patentable inventions. MPEP § 2309.01(A) ("the invention defined in each count must not be the same as, or obvious over, the invention defined in any other counts").

It is submitted that an interference should be declared based upon proposed Counts 1 and 2 because they are directed to separate patentable inventions. As discussed above, Count 1 is directed to crystalline paroxetine methane sulfonate,

whereas Count 2 is directed to any form of paroxetine hydrochloride (Craig claims 2 and 4) or a method of making paroxetine hydrochloride (Benneker claim 39).

Formulating the interference as proposed will also facilitate what should be a speedy resolution of the Count 2 subject matter. Specifically, the corresponding Craig claims (but not Benneker claims) are plainly unpatentable and that issue is ripe for summary adjudication. That is, Craig claims 2 and 4 are product-by-process claims which explicitly cover *any* form of "paroxetine hydrochloride," including the "hydrochloride hemihydrate" obtained in illustrative Examples 51-53 of the '927 patent. Since paroxetine hydrochloride hemihydrate is §102(b) prior art to claims 2 and 4, see SKB's own U.S. Patent 4,721,723 (Exhibit 10), claims 2 and 4 are clearly unpatentable. *Bamberger v. Cheruvu*, 55 USPQ2d 1523, 1529 n.3 (BPAI 1998) (citing *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)). Summary adjudication of the unpatentablility of Craig claims 2 and 4 would render unnecessary any "priority" phase as to Count 2, because Craig would have no patentable claims corresponding to Count 2. *Cf. Winter v. Fujita*, 53 USPQ2d 1478, 1489 (BPAI 2000).

'927 Claims Which Correspond To The Counts

37 CFR § 1.606 provides that all claims "which define the same patentable invention as a count shall be designated as corresponding to the count." As explained in MPEP § 2309.02, "a claim corresponds to a count if, considering the count as prior art, the claim would be unpatentable over the count under 35 U.S.C. 102 or 35 U.S.C. 103." MPEP § 2309.02 further explains, "[i]f the examiner is in doubt as to whether a party's claim does or does not correspond to a count, it should be listed as corresponding to the count."

Claims 1 And 3 Of The '927 Patent Correspond To Count 1

Claims 1 and 3 of the '927 are reproduced below:

> 1. Paroxetine methanesulfonate in crystalline form having the following characteristic IR peaks: 1603, 1194, 1045, 946, 830, 601, 554, and 539 $\pm$ 4 cm^{-1}.
>
> 3. Paroxetine methanesulfonate in crystalline form having the following characteristic IR peaks: 1603, 1194, 1045, 946, 830, 601, 554, and 539 cm^{-1}.

To the extent that "prior art" Count 1 specifically recites claims 1 or 3, those claims are anticipated by and obvious in view of Count 1. Therefore, claims 1 and 3 define the same patentable invention[2/] as Count 1 and are properly designated as corresponding to Count 1.

Claims 2 And 4 Of The '927 Patent Correspond To Count 2

Claims 2 and 4 of the '927 patent are reproduced below:

> 2. Paroxetine hydrochloride formed by conversion of paroxetine methanesulfonate, as described in claim 1, by contacting said paroxetine methanesulfonate with hydrochloric acid.
>
> 4. Paroxetine hydrochloride formed by conversion of paroxetine methanesulfonate, as described in claim 1 [sic 3][3/], by contacting said paroxetine methanesulfonate with hydrochloric acid.

To the extent that "prior art" Count 2 specifically recites claims 2 or 4, those claims are anticipated by and obvious in view of Count 2. Therefore, claims 2

[2/] Applicants do not concede that Craig claims 1 and 3 are "patentable" in a statutory sense. To the contrary, it is applicants position that all of the Craig claims are unpatentable and invalid for failure to comply with statutory conditions of patentability. The phrase "same *patentable* invention" applied above is simply a part of the interference lexicon which is employed in Rule 606. *Cf.* 1217 OG 17-18 (1998).

[3/] Although claim 4 as issued literally depends from claim 1, a typographical error occurred in the renumbering and printing of the claims. In particular, application claim 79 (now patent claim 4) depended from application claim 78 (now patent claim 3). See Exhibit 8.

and 4 define the same patentable invention[4/] as Count 2 and are properly designated as corresponding to Count 2.

Application Claims Which Correspond To The Counts

Claims 30-39 are pending in this application. See Preliminary Amendment dated November 27, 2000. Claims 30-32 and 39 correspond to Counts 1 and 2.

Application Claims 30-32 Correspond To Count 1

Claims 30-32 are reproduced below:

> 30. Crystalline paroxetine methanesulfonate prepared by crystallizing paroxetine methanesulfonate from ethyl acetate.
>
> 31. Crystalline paroxetine methanesulfonate having the following IR peaks: 531, 546, 777, 838, 931, 962, 1038, 1100, 1169, 1208, 1469, 1500, 1515, 1615, 2577, 2869, 2900, 3023.
>
> 32. Crystalline paroxetine methanesulfonate.

To the extent that "prior art" Count 1 specifically recites claims 30, 31 or 32, those claims are anticipated by and obvious in view of Count 1. Therefore, claims 30, 31 and 32 define the same patentable invention as Count 1 and are properly designated as corresponding to Count 1.

[4/] For the reasons explained above, see footnote 2, Applicants do not concede that Claims 2 and 4 define any "patentable" invention in the sense of statutory patentability.

Application Claim 39 Corresponds To Count 2

Claim 39 is reproduced below:

> 39. A process for preparing paroxetine hydrochloride comprising contacting crystalline paroxetine methanesulfonate and hydrochloric acid and thereby forming paroxetine hydrochloride.

To the extent that "prior art" Count 2 specifically recites claim 39, claim 39 is anticipated by and obvious in view of Count 2. Therefore, claim 39 defines the same patentable invention as Count 2 and is properly designated as corresponding to Count 2.

Application Claims 33-38 Do Not Correspond To Counts 1 Or 2

It is not believed that claims 33-38 of the present application correspond to Count 1 or Count 2. For example, hypothetical "prior art" Count 1 is directed to crystalline paroxetine methane sulfonate, whereas claims 33-38 are directed to pharmaceutical compositions (claims 33-35) and therapeutic methods of treatment (claims 36-38). Count 2 is concerned with paroxetine hydrochloride, a totally different salt.

The Board has observed that it is "highly unlikely" and "rare" that different classes of statutory subject matter define (or are directed to) the "same patentable invention," *Orikasa v. Oonishi*, 10 USPQ2d 1996, 2003 (BPAI 1996). On the other hand, interferences are sometimes based on a phantom count which disjunctively recites subject matter of different statutory classes, meaning that the corresponding claims <u>are</u> directed to the same patentable invention. *See Kridl v. McCormick, 41* USPQ2d 1446, 1448 (Fed. Cir. 1997) (single count disjunctively reciting "virus-resistant plant," "method of producing a virus-resistant plant," "DNA construct" or "plant cell.").

It is noted that Benneker claims 33-38 are expressly recited in and therefore clearly correspond to *additional* Counts proposed in the accompanying request for interference under Rule 604. Should the Examiner or declaring APJ determine that claims 33-38 should be designated as corresponding to Count 1 and/or Count 2, it is requested that similar SKB claims pending in any SKB applications also be so designated.

SUPPORTING DISCLOSURE FOR APPLICATION CLAIMS

Claims 30-32 and 39 were presented in the Preliminary Amendment filed November 27, 2000. Accordingly, 37 CFR § 1.607(a)(5) is inapplicable here.

COMPLIANCE WITH 35 U.S.C. § 135(b)

The requirements of 35 U.S.C. § 135(b) are met because applicants' claims 30-32 and 39 were presented in the Preliminary Amendment filed November 27, 2000, within to one year of the May 16, 2000 issue date of the '927 patent.

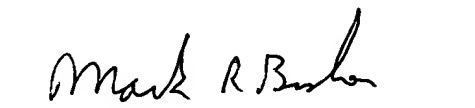
ENTITLEMENT TO EARLIER FILING DATE UNDER 35 U.S.C. § 120

Applicants request that they be accorded benefit under 35 U.S.C. § 120 of grandparent Serial No. 08/872,023, filed June 10, 1997, and of parent (same) Serial No. 09/200,743, filed November 30, 1998. The specification of this application is identical to the specification in the two underlying applications, and support for the pending claims has previously been shown.

CONCLUSION

For the reasons stated above, an interference should be declared with the '927 patent.

Respectfully submitted,



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